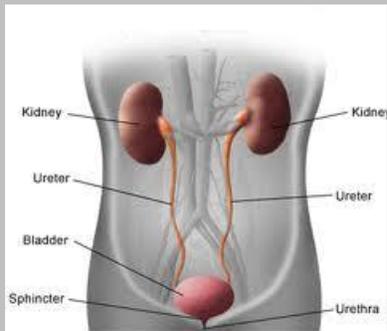


CHRONIC KIDNEY DISEASE

Chronic Kidney Disease (CKD) is the 7th highest killer of Australians. 1 in 7 people over the age of 25 have at least one marker of CKD. (1)

Know your kidneys, Love your kidneys.



Retrieved from, <http://essentialherbs.co.za> (2012).

One Study found that 16% of Australians had one or more sign of kidney damage. Prior understanding of CKD progression shows that these individuals are at a much greater risk of developing kidney failure, also known as end stage renal disease (ESRD), in the future. Many people are unaware that they have kidney damage and the incidence of CKD is rapidly rising. (2)

Shairin Farrell
Clinic information Brochure. 2014.

Signs and Symptoms of Kidney Dysfunction

This condition is usually asymptomatic.(2) The symptoms of declining renal function may not be apparent until kidney function is less than 25%. This is due to the remarkable compensatory ability of healthy nephrons to cover for those that are damaged.(1)

Many people are therefore completely unaware that they have kidney damage or CKD. It is detected via urine analysis, where the presence of blood (haematuria), proteins (proteinuria) signifies damaged nephrons. The glomerular filtration rate can also be estimated (eGFR) to determine renal function. Even mild GFR reduction increases the risk of cardiovascular disease and mortality.(2)

Blood analysis reveals increased retention of creatinine and urea. Uraemia is the name given to the clinical signs of CKD including the accumulation of wastes and toxins in the body. Uraemia is a state of systemic (whole body) inflammation.

The symptoms include:

hypertension, anaemia, nausea, vomiting, diarrhoea, weight loss, pruritis (itchy skin), oedema and anaemia. Skeletal and neurological dysfunction also occurs.(1)

Risk Factors for Kidney Disease

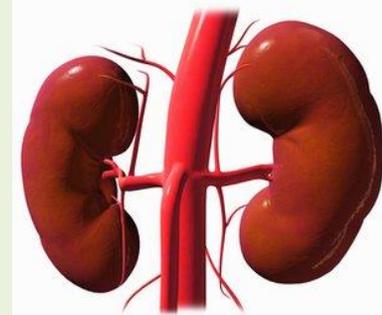
- **Diabetes**
- **Hypertension**
- **Advancing age**
- **Nephritis - kidney inflammation**
- **Urinary system infection**
- **Autoimmune renal tissue attack**
- **Medication abuse – such as analgesics and recreational drugs.**
- **Exposure to toxins and poisons**
- **Smoking. (3)**

Where are my kidneys and What do they do?

The kidneys are two bean shaped organs located within your back, just above your waistline. Each kidney is approximately 11 cm long and contains more than a million tiny processing centers called nephrons. These nephrons are complex structures where blood is strained from the arteries into the glomerulus. This sieve removes excess and waste products whilst retaining particles that are still of value to the body.

The kidneys receive 25% of the total volume of blood pumped by the heart, this equates to 1000mL to 1200mL per minute. (1)

Image from: Nucleus Medical media visuals UN

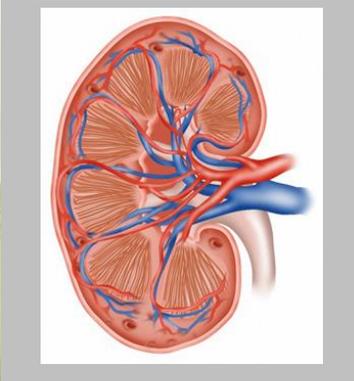


NUCLEUS MEDICAL MEDIA VISUALS UN

Your kidneys:

- Excrete wastes including: urea, ammonia, creatinine, toxins, and drugs.**
- Maintain correct balance of electrolytes, glucose, pH and consistency of blood.**
- Regulate blood pressure and volume.**
- Maintain calcium levels by activating Vitamin D**
- Create erythropoietin for red blood cell production. (3)**

How do they do it?



Structure of kidney and nephron: N0026029
retrieved from, <http://news.vanderbilt.edu/>

In the nephrons, small arteries (capillaries) are closely intertwined with collecting tubules. The blood is pushed, mostly via its own pressure, through the glomerular capsule filter mechanism. This feeds into the collecting tubules where substances are simultaneously secreted and resorbed by the capillaries. This delicate process is tightly controlled by hormones and the structure of the nephron itself. The resulting fluid is excreted via the urinary system as urine.(1)

For support or more information:
Kidney Health Australia –

www.kidney.org.au Offer a support and information service to the general public
Phone 1800 4 KIDNEY (543 639), Email KHIS@kidney.org.au

Kidney Support Network - in Brisbane
<http://www.ksn.org.au> Phone 3300 0906
Email: ksn@ksn.org.au

Queensland Health www.health.qld.gov.au
has some useful fact sheets.

Kidney Damage and CKD

Kidney damage affects the function of the nephrons. This reduces their capacity to remove wastes from the blood.(4) CKD occurs when progressive dysfunction of the kidneys continues for more than three months. Many kidney conditions can lead to CKD. Diabetes mellitus and hypertension both affect the kidneys and are the main ones indicated. Other kidney conditions such as chronic nephritis, glomerulonephritis or pyelonephritis (inflammation) or chronic obstructions (ie. Kidney stones) damage the kidneys and if sustained are described as CKD.(1)

Kidney damage from any disease, condition or trauma can be life threatening. Due to the kidneys multiple roles, CKD will affect many body systems.

Other functions of the kidneys are gradually diminished. As the delicate balance of fluids, electrolytes and pH is disrupted symptoms begin to appear. Fluid imbalance shows itself as oedema and maintenance of electrolyte proportions are essential for heart health and muscular functioning among many other processes. Vitamin D synthesis and calcium balance is disrupted by CKD, affecting bone health. Red blood cell production is reduced This leads to anaemia and lethargy. Uraemia causes itching skin and an inflammatory cascade that further stresses the whole body.(5)

Over time CKD eventually results in end stage renal disease and kidney failure. The outcome is bleak with dialysis or transplant the final options. There is also a high risk of mortality. (1) CKD is also closely linked with cardiovascular disease.(2)

What can I do?



Image from, <http://www.theage.com.au/>

If you have any of the risk factors for CVD see your GP for screening. *Treat any suspected urinary tract infection promptly by seeing your GP. *Health care providers including a nutritionist(3) can help manage CVD as can regular monitoring.(2) *Manage hypertension (2) by keeping your Bp below 130/80.(4) *Diabetics should maintain target ranges of glucose.(4) *Regular exercise in the form of cardiovascular and resistance training has been shown to improve fitness, hypertension and healthful quality of life.(6) *Current CKD sufferers (except diabetics) can reduce protein consumption moderately ESRD.(7)

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